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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YUKI SASAKI and HIROTAKA MATSUOKA

Appeal 2009-006539
Application 10/731,031
Technology Center 1600

Decided: January 8, 2010

Before DONALD E. ADAMS, ERIC GRIMES, and
RICHARD M. LEOVITZ, *Administrative Patent Judges*.

LEOVITZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on the appeal by the Patent Applicants from the Patent Examiner's rejections of claims 1-16 and 18-20 as anticipated and obvious over prior art. The Board's jurisdiction for this appeal is under 35 U.S.C. §§ 6(b) and 134. We affirm.

STATEMENT OF THE CASE

The claimed invention relates to a resin powder used in cosmetics. The powder is composed of particles. The instant application states “by setting up each of a degree of hydrophobicity and a shape factor SF1 of the resin powder [particles] to a specific range and making the resin powder [particles] have a specific shape” (Spec. 2-3), “it is possible to impart more sufficient spreadability and adhesiveness to cosmetics” (*id.* at 3). All the claims require that the particles satisfy the following equations:

$$0.5 < b/a < 1$$

$$0.4 < c/b < 0.8,$$

where *a* is the major axis, *b* is the minor axis, and *c* is the thickness of each particle present in the powder (Spec. 3). Figure 1 shows that *a* and *b* correspond to length and width dimensions of a particle’s projected area (Spec. 13-14).

The pending claims in the application are claims 1-16 and 18-20. All the pending claims stand rejected by the Examiner as follows:

Claims 1-15¹ and 18-20 under 35 U.S.C. § 102(e) as anticipated by Sasaki ‘370 (US 2003/0044370 A1, published Mar. 6, 2003) (Ans. 3);

Claims 1-15 and 18 under 35 U.S.C. § 102(e) as anticipated by Sasaki ‘649 (US 6,893,649 B2, issued May 17, 2005) (Ans. 4); and

¹ Claim 16 was included in the statement of both anticipation rejections on pages 3 and 4 of the Answer. We treat this as an error for the following reasons: 1) Appellants did not list claim 16 in stating the grounds of the anticipation rejections on appeal (App. Br. 11) and the Examiner did not indicate that Appellants’ statement was incorrect; and 2) Claim 16 was not rejected in the anticipation rejections listed on page 3 of the Final Rejection. Because the subject matter of claim 16 was addressed in the obviousness rejection, we treat claim 16 as rejected as obvious, but not anticipated.

Claims 1-16 and 18-20 under 35 U.S.C. § 103(a) as obvious in view of Sasaki '370 and Sakuma (US 2003/0023021 A1, published Jan. 30, 2003) (Ans. 6).

Claims 1, 2, and 15 are representative and read as follows:

1. A resin powder for a cosmetic comprising particles containing a resin, wherein the particles have a degree of hydrophobicity of from 10 % to 60 %, wherein the particles have undergone a reshaping treatment, and when seen from a direction in which a projected area of the particle to a plane is maximum, the particles satisfy the following equations:

$$0.5 < b/a < 1$$

$$0.4 < c/b < 0.8$$

where

a is a major axis of each particle;

b is a minor axis of each particle; and

c is a thickness of each particle.

2. The resin powder according to claim 1, wherein the particles have an average value of shape factors SF1 of from 110 to 140 and the shape factor SF1 is defined by

$$SF1 = (ML^2/A) \times (\pi/4) \times 100$$

where ML represents a maximum length of the particles, and A represents a projected area of the particles.

15. A process for preparing a resin powder for cosmetic including particles containing a resin, comprising a step of producing the particles by emulsion polymerization, a step of subjecting the particles to a reshaping treatment and a step of flattening the particles by colliding the particles against a uniform plane under high pressure, wherein the particles have a degree of hydrophobicity of from 10 % to 60 %, and when seen from a direction in which a projected area of the particle to a plane is maximum, the particles are satisfactory with the following equations:

$$0.5 < b/a < 1$$

$$0.4 < c/b < 0.8$$

where

a is a major axis of each particle;

b is a minor axis of each particle; and

c is a thickness of each particle.

ANTICIPATION BY SASAKI '649 AND '370

Statement of the issue

The Examiner contends that the Sasaki references (the '649 patent and '370 patent application) describe particles which inherently possess the claimed characteristics. Appellants contend that the Examiner erred in this determination and that neither reference describes particles which satisfy the claimed b/a and c/b ratios.

Principles of Law

Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. See *In re Ludtke*, *supra*. Whether the rejection is based on 'inherency' under 35 U.S.C. § 102, on 'prima facie obviousness' under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products. See *In re Brown*, 459 F.2d 531, 59 CCPA 1036, 173 USPQ 685 (1972).
In re Best, 562 F.2d 1252, 1255 (CCPA 1977).

"[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990).

A "prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference." *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1343 (Fed. Cir. 2005).

Findings of Fact (“FF”)

Sasaki ‘649 Patent

1. Sasaki ‘649 describes a solid powder cosmetic with spherical resin particles (Abstract). The particles have specific sizes, a size distribution, and resin characteristics to provide a cosmetic “which accomplishes smooth and uniform spread and a dry feel.” (Col. 1, ll. 9-12; col. 2, ll. 37-44.)
2. The patent describes the average volume particle size as 2 µm to 20 µm (col. 4, ll. 26-29).
3. The particles have a shape factor SF1 from 100 to 140 (Abstract).
4. “As the shape factor SF1 approaches 100, the particle is regarded as being close to a spherical form, and the particle exceeding 140 has a big difference between a maximum length and a minimum length.” (Col. 4, l. 65 to col. 5, l. 2.)
5. The patent discloses eight examples of particles with a SF1 from 112 to 143 (Table 3 at cols. 11-12).

Sasaki ‘370 Application

6. Sasaki ‘370 describes a resin powder for a dermatological composition that attains sufficient spreadability and skin adhesion (Abstract; ¶ 8).
7. The powder is composed of resin particles having an average volume particle size of 2 µm to 20 µm (Abstract).
8. The particles have a shape factor SF1 from 110 to 140 (Abstract).
9. The shape factor SF1 is defined by the following formula (¶ 25)

$$SF1 = (\pi \times (ML/2)^2 / A) \times 100$$

“ML means the maximum length (absolute maximum length) of resin particles and A means a projected area of resin particles. The term

‘projected area of resin particles’ means an area of resin particles projected onto a circle having the maximum length of resin particles as a diameter.” (§ 26.)

10. Sasaki teaches that spreadability and adhesion vary as the SF1 is changed (§ 26-28). “When the shape factor SF1 exceeds 140, unevenness appears on the surface of the resin particles, which improves skin adhesion. Spreadability upon application on the other hand becomes insufficient.” (§ 28.)

11. Fig. 1 shows a relation between particle volume and particle diameter size.

12. “As the shape factor SF1 approaches 100, the resin particles are of truer sphere. The greater it becomes, on the other hand, the more unevenness appears on the surface and the shape of the resin particles is farther from a true sphere.” (§ 26.)

13. Sasaki ‘370 describes ten specific examples of particles with a SF1 of 110-120 (p. 7-8, Tables 2 & 3) and two comparative examples with a SF1 of 145 and 146 (*id.* at Table 3).

Sasaki I Declaration – dated Dec. 13, 2006 (Sasaki I Dec.)

14. Yuki Sasaki, a co-inventor of the instant application, described experiments performed with comparative resin powders A, B, and C “prepared in accordance” with Example 1 of Sasaki ‘370, Example 1 of Sasaki ‘649, and Example 1 of U.S. Pat. No. 7,005,480, respectively (Sasaki I Dec. 2). Mr. Sasaki stated that reshaping was not conducted in preparing powders A, B, C (*id.*).

15. Mr. Sasaki stated “comparative resin powders A and B were prepared in the same manner as Preparation Example 1 described in the present application.” (Sasaki I Dec. 2.)

16. Powders A, B, and C were found to have a SF1 of 112, 115, and 102, respectively (Sasaki I Dec. 3, Table 1).

17. The b/a and c/b ratios of the particles in powders A, B, and C were measured (Sasaki I Dec. 2-3, Table 1).

18. Mr. Sasaki testified and provided factual evidence that the comparative resin powders A, B, and C “do not satisfy the requirements of the claimed projected particle dimension limitations, namely the requirements that $0.5 < b/a < 1$ and $0.4 < c/b < 0.8$.” (Sasaki I Dec. 3; Table 1.)

Sasaki II Declaration – dated Mar. 7, 2007 (Sasaki II Dec.)

19. In a second declaration, co-inventor Yuki Sasaki prepared seven resin powders according to Examples 1-7 of Sasaki ‘370 (Sasaki II Dec. 2).

20. The powder particles were found to have an SF1 of 110-113 (Sasaki II Dec. 2, Table 1).

21. The b/a and c/b ratios of the particles were measured (Sasaki II Dec. 2-3, Table 1).

22. Mr. Sasaki testified and provided factual evidence that Examples 1-7 of Sasaki ‘370 “do not satisfy the requirements of the claimed projected particle dimension limitations, namely the requirements that $0.5 < b/a < 1$ and $0.4 < c/b < 0.8$.” (Sasaki II Dec. 3; Table 1.)

23. Mr. Sasaki also prepared resin powders of Examples 1-8 of Sasaki ‘649 (Sasaki II Dec. 3.)

24. The powder particles were found to have a SF1 of 112-143 (Sasaki II Dec 3, Table 2).
25. The b/a and c/b ratios of the particles were measured (Sasaki II Dec. 2).
26. Mr. Sasaki testified and provided factual evidence that Examples 1-8 of Sasaki '649 "do not satisfy the requirements of the claimed projected particle dimension limitations, namely the requirements that $0.5 < b/a < 1$ and $0.4 < c/b < 0.8$." (Sasaki II Dec 3; Table 2.)

Analysis

It is axiomatic that the PTO does not have facilities for testing whether a product disclosed in the prior art is the same as one which is claimed. *In re Best*, 562 F.2d at 1255. For this reason, once the Examiner comes forward with sufficient evidence – a "sound basis" – to believe that the prior art necessarily or inherently possesses the claimed characteristics, the burden shifts to the patent applicant to prove the prior art does not. *Id.*; *In re Spada*, 911 F.2d at 708.

In this case, the Examiner found that Sasaki '649 and '370 described resin powders with resin particles that had shape factors SF1 which fell within the range of "from 110 to 140" recited in dependent claim 2² (Ans. 3 & 5; FF3 & 8). Based on these findings, the Examiner reasoned the Sasaki particles would also possess the claimed b/a and c/b ratios because SF1 is "clearly dependent" on the a, b, and c values (Ans. 9).

Based on the SF1 similarity, we conclude that the Examiner had sound basis to believe that Sasaki '649 and '370 described a resin powder

² Claim 2 depends on claim 1 and therefore incorporates all the claim 1 limitations.

with particles that anticipated claims 1 and 2. The burden therefore properly shifted to Appellants to prove that Sasaki '649 and '370 did not describe a resin powder which necessarily or inherently possessed the characteristics of the claimed resin powder. Appellants met this burden.

In the Sasaki I and II declarations, co-inventor Yuki Sasaki described tests in which he produced resin powders as described in the Sasaki '649 patent and the Sasaki '370 application. Although the prior art powders had SF1 values which met the limitations of claim 2, Mr. Sasaki testified, and supported his testimony with factual evidence, that his data showed that their b/a and c/b ratio did not satisfy the claimed requirement of " $0.5 < b/a < 1$ " and " $0.4 < c/b < 0.8$." (FF18, 22, & 26.) Therefore, the Examiner's reasoning that a particle with an SF value as in claim 2 would inherently have had b/a and c/b values within the claimed range was rebutted by Mr. Sasaki's testimony.

The Examiner rejected the rebuttal evidence for several reasons. Substituting the a , b , and c values in the equation for defining SF1, the Examiner argued that SF1 is dependent on the a , b , and c values and thus "it is inherent that the Sasaki references teach the same dimensions as those claimed" (Ans. 8-9).

Appellants rebutted this argument. First, while SF1 may depend on the variables a , b , and c , they are independent variables. The Examiner did not establish that a , b , and c predict the relationship between the b/a and c/b ratios and the shape factor value (Reply Br. 2). Secondly, the evidence in the Sasaki declarations establish SF1 values that meet the claimed SF1 limitation, but which did not have the b/a and c/b values required by claims 1 and 2.

The Examiner also found the declarations insufficient because Mr. Sasaki only reproduced several examples from each of the Sasaki references, but “many variations are possible without departing from the spirit and scope of the invention” (Ans. 10 & 12). In other words, the Examiner’s position is that there is other disclosure in Sasaki ‘649 and ‘370 which would have led to resin particles that inherently possessed the claimed characteristics.

The Examiner has not applied the proper standard of inherent anticipation. “[A] prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is *necessarily present*, or inherent, in the single anticipating reference.” *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d at 1343 (emphasis added).

For the Examiner to have established that the missing characteristic was “necessarily present” in the Sasaki references, a sound basis was needed to believe that, following Sasaki’s guidance, a particle would have resulted with the claimed b/a and c/b values. However, the declaration evidence showed that, following certain working examples in the Sasaki references, particles were produced that fell *outside* the claimed b/a and c/b range. The Examiner correctly recognized that disclosures of Sasaki ‘649 and ‘370 were not limited to the examples addressed in the Sasaki declarations, but the Examiner proffered no evidence that following other disclosed examples, or the more generic disclosure in the Sasaki references, that particles within the claimed b/a and c/b range would have been obtained. To the contrary, Mr. Sasaki’s testimony dispelled the Examiner’s inference that like SF1 values were associated with like b/a and c/b values. Once the inference was struck down, the Examiner had no other sound basis to believe that Sasaki’s

teachings would have produced anticipatory subject matter, let alone that a particle of $0.5 < b/a < 1$ and $0.4 < c/b < 0.8$ would have “necessarily” been present in Sasaki ‘649 or ‘370.

It was asserted by the Examiner that Appellants had “consciously selected to show only examples from the Sasaki references which are spherical in nature when clearly the references disclose that spherical particles are not the only embodiment and are not even preferred.” (Ans. 12.) This is not factually correct. Particles with an SFI close to 100 are generally spherical, while those with a higher SFI are “farther from a true sphere” (FF4 & 12). The Sasaki II Declaration produced particles with an SFI of 112-143 (FF24), covering the complete range disclosed in Sasaki ‘649 and including more sphere-like (112) to less sphere-like shapes (143). In none of these cases was a particle obtained that met the claimed requirement of $0.5 < b/a < 1$ and $0.4 < c/b < 0.8$ (FF26).

OBVIOUSNESS

Statement of the issue

The Examiner contends that it would have obvious to persons of ordinary skill in the art to have performed the reshaping treatment recited in claims 1 and 15 in view of the teachings of Sasaki ‘370 and Sakuma. Appellants contend that the Examiner erred in this determination.

Principles of Law

The “discovery of an optimum value of a variable in a known process is usually obvious.” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1368 (Fed. Cir. 2007).

Findings of Fact

Sakuma

27. Sakuma describes resin particles for use in various fields, including cosmetics (§ 1).

28. Sakuma states:

The inventors . . . found that resin particles having novel shapes formed by two curved surfaces or by one curved surface and one plane surface, between which there is a boundary line, can be obtained by mixing a polymeric vinyl monomer and a hydrophobic liquid compound, which has a specific viscosity and does not co-polymerize with the polymerizable vinyl monomer, in a specified ratio and then subjecting the mixture to suspension polymerization in the absence of any crosslinking agent.

(§ 9.)

29. Sakuma teaches:

In order to make even the particle diameter of the resin particles obtained, it is preferable to use a high-pressure dispersing machine such as microfluidizer, nanomizer, etc., in which high crash power among the liquid drops or against the vessel wall is utilized, or to introduce the vinyl monomer into the dispersion medium under pressure through a porous film of MPG (micro-porous glass).

(§ 73.)

Differences between the prior art and the claimed invention

30. Sasaki '649 and '370 teach resin powders and processes for preparing them as in claims 1 and 15, but do not describe the “reshaping treatment” of claim 1 or “a reshaping treatment and a step of flattening the particles by colliding the particles against a uniform plane under high pressure” as recited in claim 15 (Ans. 7).

31. Appellants do not dispute that Sakuma describes the reshaping and flattening steps as recited in claims 1 and 15 (*see* Reply Br. 5).

Analysis

In making an obviousness determination, the Examiner has the burden of establishing a *prima facie* case. This includes articulating a reason as to why persons of ordinary skill in the art would have combined the prior art teachings to have made the claimed invention. Here, the Examiner found that persons of ordinary skill in the art would have had reason to apply Sakuma's reshaping treatment to the particles described in Sasaki '649 and '370 to obtain a "desirable particle dimension with an even distribution of the shaped particles that would have improved skin adhesion and spreadability." (Ans. 7-8.) The Examiner's position is supported by the evidence:

Sasaki '649 and '370 described particles with specific sizes, size distributions, and shapes to achieve a cosmetic that adheres to and uniformly spreads on the skin (FF1-4 & 6-11). The particles varied from being true spheres to less spherical, depending on the shape factor SF1 (FF4 & 12). Particle size (diameter), shape factor (with length and diameter as variables that affect the factor value), and particle evenness were recognized parameters that affected the cosmetic's properties, particularly skin adhesion and spreadability (FF10-12). Sakuma taught a reshaping treatment to even particle diameter, a variable recognized by Sasaki as involved in affecting a cosmetic's properties, such as its spreadability (FF10-12). Therefore, as stated by the Examiner, persons of ordinary skill in the art would have had

reason to apply Sakuma's teaching to Sasaki's particles to improve their skin spreadability and adhesion.

The Examiner also had found that Sasaki's particles met the b/a and c/b values recited in the claims. As discussed above, the Examiner erred in this determination. However, as particle size, diameter, and shape were recognized as affecting a cosmetic's properties, persons of ordinary skill in the art would have had reason to optimize these parameters to achieve a cosmetic with suitable characteristics. The "discovery of an optimum value of a variable in a known process is usually obvious." *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d. at 1368.

Appellants contend that Sakuma requires particles with a distinct boundary line (App. Br. 18). Appellants argue that Sakuma "specifically indicates that the particles . . . are shaped differently than the particles disclosed in the present application having a rugby ball shape" and thus teaches away from particles "having the b/a ratio between 0.5 and 1.0 and the c/b ratio between 0.4 and 0.8 as recited in the present claims." (*Id.*)

This argument does not persuade that the Examiner erred. The Examiner provided a logical reason as to why persons of ordinary skill in the art would have modified the Sasaki particles with Sakuma's shape treatment (Ans. 7-8). The Examiner did not, as Appellants contend, suggest modifying Sakuma's boundary lined particles. Rather, the Examiner relied on Sakuma's disclosure of reshaping Sasaki's formed particles (Ans. 13).

CONCLUSIONS OF LAW & SUMMARY

The Examiner erred in finding that the particles in Sasaki '649 and '370 inherently possessed the claimed b/a and c/b ratios. The rejections of

claims 1-15 and 18-20 as anticipated by Sasaki '649 and Sasaki '370 is reversed.

The Examiner did not err in determining that it would have been obvious to have combined Sasaki '370 with Sakuma's teaching about performing a reshaping treatment on resin particles. The rejection of claims 1 and 15 is affirmed. Claim 2-14, 16, and 18-20 fall with claims 1 and 15 because separate arguments for their patentability were not provided. 37 C.F.R. § 41(c)(1)(vii).

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cdc

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